

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Original) An optical sheet comprising:
a retardation film; and
a transparent layer provided on one of opposite surfaces of said retardation film;
wherein said retardation film exhibits $N_z = (n_x - n_z)/(n_x - n_y)$ in a range of from 0.6 to 0.9 and $(n_x - n_y)d$ in a range of from 200 to 350 nm in which d is a thickness of said retardation film, n_z is a refractive index in a direction of a Z axis expressing a direction of the thickness d of said retardation film, n_x is a refractive index in a direction of an X axis expressing a direction of said retardation film in a plane perpendicular to said Z axis while said X axis also expresses a direction of the highest in-plane refractive index, and n_y is a refractive index in a direction of a Y axis expressing a direction of said retardation film perpendicular both to said Z axis and to said X axis; and
wherein said transparent layer has a thickness not larger than 10 μm and exhibits refractive index anisotropy of $n_x \cong n_y > n_z$.

2. (Original) An optical sheet according to claim 1, wherein said transparent layer is made of a coating film of an organic material.

3. (Currently Amended) An optical sheet according to claim 1, wherein said transparent layer ~~[[is]]~~ comprises a cholesteric liquid-crystal layer.

4. (Previously Presented) A polarizer comprising:

an optical sheet; and

a polarizing film disposed on said optical sheet,

said optical sheet comprising:

a retardation film; and

a transparent layer provided on one of opposite surfaces of said retardation film;

wherein said retardation film exhibits $N_z = (n_x - n_z)/(n_x - n_y)$ in a range of from 0.6 to 0.9 and $(n_x - n_y)d$ in a range of from 200 to 350 nm in which d is a thickness of said retardation film, n_z is a refractive index in a direction of a Z axis expressing a direction of the thickness d of said retardation film, n_x is a refractive index in a direction of an X axis expressing a direction of said retardation film in a plane perpendicular to said Z axis while said X axis also expresses a direction of the highest in-plane refractive index, and n_y is a refractive index in a direction of a Y axis expressing a direction of said retardation film perpendicular both to said Z axis and to said X axis; and

wherein said transparent layer has a thickness not larger than 10 μm and exhibits refractive index anisotropy of $n_x \approx n_y > n_z$.

5. (Original) A polarizer according to claim 4, wherein said polarizing film is disposed on a side of said optical sheet opposite to the transparent layer side of said optical sheet so that said X axis direction of said retardation film of said optical sheet is parallel with an axis of absorption of said retardation film.

6. (Previously Presented) A liquid-crystal display device comprising:
a vertically oriented liquid-crystal cell; and
a pair of polarizers each comprising an optical sheet and a polarizing film disposed on said optical sheet, said pair of polarizers being provided on opposite sides of said cell;
wherein a transparent layer in each of said pair of polarizers is positioned on corresponding one of opposite sides of said cell; and
wherein said pair of polarizers provided on said opposite sides of said cell are disposed in the form of crossed-Nicol,
said optical sheet optical sheet comprising:
a retardation film; and
a transparent layer provided on one of opposite surfaces of said retardation film;
wherein said retardation film exhibits $N_z = (n_x - n_z)/(n_x - n_y)$ in a range of from 0.6 to 0.9 and $(n_x - n_y)d$ in a range of from 200 to 350 nm in which d is a thickness of said retardation film, n_z is a refractive index in a direction of a Z axis expressing a direction of the thickness d of said retardation film, n_x is a refractive index in a direction of an X axis expressing a direction of said retardation film in a plane perpendicular to

said Z axis while said X axis also expresses a direction of the highest in-plane refractive index, and n_y is a refractive index in a direction of a Y axis expressing a direction of said retardation film perpendicular both to said Z axis and to said X axis; and

wherein said transparent layer has a thickness not larger than 10 μm and exhibits refractive index anisotropy of $n_x \cong n_y > n_z$.

7. (Original) A liquid-crystal display device according to claim 6, wherein a sum of absolute values of thicknesswise retardations each defined by a product of $\{(n_x + n_y)/2 - n_z\}$ and a layer thickness of said transparent layer in each of said pair of polarizers disposed on the opposite sides of said liquid-crystal cell is in a range of from 0.5 times to 1.3 times as large as an absolute value of a thicknesswise retardation of said liquid-crystal cell.

8. (Previously Presented) A liquid-crystal display device comprising:
a vertically oriented liquid-crystal cell;
a pair of polarizers each comprising an optical sheet and a polarizing film disposed on said optical sheet, said pair of polarizers being disposed in the form of crossed-Nicol on opposite sides of said liquid-crystal cell; and
at least one phase retarder disposed between said liquid-crystal cell and one or both of said polarizers;

wherein said phase retarder exhibits refractive index anisotropy of $n_x \cong n_y > n_z$; and

wherein a sum of absolute values of thicknesswise retardations defined by a product of $\{(n_x + n_y)/2 - n_z\}$ and a layer thickness of each of transparent layers of said polarizers disposed on said opposite sides of said liquid-crystal cell and an absolute value of a thicknesswise retardation of said phase retarder is in a range of from 0.5 times to 1.3 times as large as an absolute value of a thicknesswise retardation of said liquid-crystal cell,

said optical sheet comprising:

a retardation film; and

a transparent layer provided on one of opposite surfaces of said retardation film;

wherein said retardation film exhibits $N_z = (n_x - n_z)/(n_x - n_y)$ in a range of from 0.6 to 0.9 and $(n_x - n_y)d$ in a range of from 200 to 350 nm in which d is a thickness of said retardation film, n_z is a refractive index in a direction of a Z axis expressing a direction of the thickness d of said retardation film, n_x is a refractive index in a direction of an X axis expressing a direction of said retardation film in a plane perpendicular to said Z axis while said X axis also expresses a direction of the highest in-plane refractive index, and n_y is a refractive index in a direction of a Y axis expressing a direction of said retardation film perpendicular both to said Z axis and to said X axis; and

wherein said transparent layer has a thickness not larger than 10 μm and exhibits refractive index anisotropy of $n_x \approx n_y > n_z$.